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THE AMERICAN CERAMIC SOCIETY

By PROF. R. C. PURDY, SECRETARY



FOUNDED in 1898 by Professor Edward Orton, Jr., and by him, as secretary, guided through twenty years of struggling for recognition as a useful factor in industrial ceramics, the American Ceramic Society has now a membership of over 2,200 and is recognized as an essential to the wellbeing and progress of ceramics technically and industrially. This struggle for acceptance by the industrialists was contemporaneous with the struggle which science and technology has and is making against the false impression that a successful scientist and successful engineer can not be at the same time thoroughly practical. The industrial executives are rapidly learning that to succeed as a scientist or as an engineer one must be practical, and that being successful and being practical have the same cause and effect relations in fundamental science and engineering as in the fabrication and marketing of merchandise.

Thus the growth of the American Ceramic Society and its changes in activities and interests reflect the changes in appreciation of the manufacturers of the value of the fundamentals in science and technology. The society today is being supported actively by an increasing number of factory executives, many of whom have not had the advantage of school training. The working personnel of the Society include managers, plant operators and research engineers, as well as those engaged in educational and general scientific research. This example of a common appreciation and promotion of ceramic technology differs in no wise from the general tendency of the times; the trained engineer, with a solid footing on the science fundamentals is recognized as a practical thinker and worker, one with whom the entire factory personnel must collaborate.

The rapid growth from 537 members in 1916 to 2,247 members in 1923, is illustrative of the growing demand for trained ceramists. The ceramic departments are experiencing an increase in demand for graduate ceramic engineers. There are now several unfilled opportunities for men. The states of Washington, Georgia and Colorado and the Province of Saskatchewan have established collegiate ceramic departments, and North Carolina, Pennsylvania and the Province of Ontario have plans well matured for the establishing of ceramic departments for the purpose of training and research. The Massachusetts School of Technology is contemplating a department of ceramic engineering.

With going departments at Ohio State, Iowa State, Rutgers, Alfred, N. Y., Illinois, Washington and Saskatoon and with partial courses at three other universities and with newly founded departments and with the contemplated ones, there would still be that same increasing demand in excess of supply of graduate ceramic engineers and scientists. And this is only a reflection of the increasing appreciation of the practicalness if not the necessity of the fundamentals in science and engineering.

The early twenty years of concerted effort of the members of the American Ceramic Society to demonstrate the practicableness of the application of fundamental science to ceramic manufacturing and the latter six years of rapid growth in appreciation and support is but the reflection of the attitude of industrialists gen-

erally. The rapid growth in number of industrial associations, engineer, science, trade, accounting, etc., bespeak something more than a general appreciation of the application of the scientific fundamentals; they reflect a growing appreciation of collaboration. Industrialists, like the scientists, can do but very little; can know but very little of the vast fund of known and proven facts and principles. To make the most certain and the most rapid progress it is essential that several collaborate. Co-operative research is beyond the experimental, it is a demonstrated essential, and the co-operation has its influence and participation alike in the industries, the public institutions and schools. Manufacturers' associations, college experiment stations and federal bureaus are collaborating.

This collaboration in the American Ceramic Society is carried further than between manufacturers of like products and the educational and research institutions. The Ceramic Art, Enamel, Glass, Brick, Sewer Pipe, Drain Tile, Refractories, Terra Cotta, Sanitary and Electrical Porcelain; indeed all producers of clay, glass and enameled products have found so many fabricating problems of common concern and have learned that the same fundamental scientific principles apply, that there is value in a collaboration of ceramists although diversified, and, apparently, so different are their products. Thus it is that the American Ceramic Society operates through seven Industrial Divisions—Ceramic Art, Enamel, Glass, Heavy Clay Products, Refractories, Terra Cotta and White Wares. The divisions are self controlled and each hold separate convention sessions. The conventions of the American Ceramic Society are in fact seven conventions in one. Thus is reflected the breadth of application and the commonness in basic principles of ceramic technology.

If there was no correlation of effort on research work, much duplication would result. And this correlation must extend to the indexing and abstracting of the literature when one recalls the large number of scientists, engineers and plant operators the world over who are observing, making experiments and applications, there comes a recognition of the value of a medium of exchange of information. No one man has the capacity nor the time to make many observations, experiments or applications. Industrial progress would indeed be slow, if at all, if each person was isolated and without the knowledge created by his fellows. The only medium of exchange in knowledge is printed records and the accumulation of printed records is growing stupendous in volume and diversity so that it is beyond any person's possibilities to come in contact with more than a small fractional portion of these records. It is the function of the American Ceramic Society to secure collaboration of its members in the abstracting and in indexing of the world's literature of value to ceramists.

The start and the growth of all manufacturing processes is founded upon discoveries and inventions. Behind the inventions are countless accurate fundamental observations often unrelated in purpose and character. It is interesting to speculate on how many years of accurate laboratory searching and proving if fundamentals was necessary before so simple and common-

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place thing as the telephone was possible of conception. The telephone was the product of the work of hundreds of scientists, and its present-day refinement and adaptation to different conditions necessitates the full-time service of hundreds of scientists and engineers on fundamentals and their application.

New products and new processes are not the result of a sudden inspiration. They invariably represent a series of discoveries and experiences over a period of several years and decades. There is no new thing for which any man can claim the whole credit. New products and processes result from the applying of previously known facts and principles to a definite purpose. There may be originality in recognizing what the resultant would be if two or more things or processes were brought to a common objective.

It is interesting, also, to conjecture the many new products and processes there will be created each year when there is a more general collaboration in research and in indexing and abstracting of the world's fund of knowledge. Manufacturers generally will prosper because of their collaboration, and the manufacturer who does not participate in these collaborating enterprises can not and will not prosper.

These principles of collaboration and correlation are rapidly being recognized by manufacturers and tradesmen. Thousands of industrial organizations have been established during the past decade. The technical and scientific societies are increasing in numbers and in strength. The universities and the closeted scientist is no longer the only investigating and teaching force. The part played and to be played by the technical societies in research and in education extension is beyond one's conception.

The university graduate no longer has exclusive use of scientific fundamentals. His language in terms of fundamental units and formulæ are no longer strange to the successful plant superintendent. This has resulted from the collaboration in technical societies of the plant and the university workers. It has brought about a more mutual respect and understanding.

In educational extension and research promotion, the American Ceramic Society is by no means unique, for this is the present-day program of several of the technical and scientific societies. This sort of service program does, however, distinguish the Society as it is today from that which it was for the first twenty years following its founding.

The broad and thoroughgoing program laid down by Professor Orton was the essential foundation for the much more extensive program of today. The broadening of interest and the multiplying of ways of service through the Society for, by and of its members merely reflects the mutual change in the attitude of the plant manager and collegiate student.

It is no mere coincidence that the world's first collegiate Department of Ceramic Engineering and the first and largest Ceramic Society should have been conceived at the Ohio State University. Both were the product of and long had the guiding hand of one man—Professor Edward Orton, Jr. But he alone could not and probably would not have started nor continued either the Department or the Society had Ohio not been the leading producer of ceramic products and the Ohio producers among the most progressive.